

TRANSPORT FOR NSW (TfNSW)

QA SPECIFICATION 3153

RECLAIMED ASPHALT PAVEMENT MATERIAL

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REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 1/Rev 0		First issued	GM, IC	23.05.11
Ed 1/Rev 1	Global	References to “Roads and Maritime Services” or “RMS” changed to “Transport for NSW” or “TfNSW” respectively.	DCS	22.06.20

<p style="text-align: center;">GUIDE NOTES (Not Part of Contract Document)</p>

Using Specification 3153

Refer to the relevant asphalt specifications for requirements on:

- (a) Class of binder to be added to asphalt containing RAP material.
- (b) RAP level permissible in various asphalt products and pavement applications (eg heavy duty asphalt versus light duty asphalt).
- (c) The binder content tolerance of the production mix with or without RAP material.
- (d) The inclusion of RAP material in asphalt manufactured using WAM technology.



RECLAIMED ASPHALT PAVEMENT MATERIAL

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VERSION FOR: DATE:

CONTENTS

CLAUSE	PAGE
FOREWORD	ii
TfNSW Copyright and Use of this Document	ii
Revisions to Previous Version	ii
Project Specific Changes	ii
1 SCOPE.....	1
2 STRUCTURE OF THE SPECIFICATION.....	1
2.1 (Not Used).....	1
2.2 Schedule of Identified Records.....	1
2.3 Frequency of Testing.....	1
2.4 Referenced Documents.....	1
3 DEFINITIONS AND ABBREVIATIONS	1
4 SUPPLIER’S QUALITY MANAGEMENT SYSTEM	2
5 MATERIALS	2
6 (NOT USED).....	2
7 PROCESS CONTROL	2
7.1 Processing.....	2
7.2 Stockpiling.....	2
7.3 Transport of Processed Material from Processing Site to the Asphalt Plant.....	3
7.4 Stockpiles at Asphalt Plant.....	3
7.5 Traceability of Material in Asphalt Production.....	3
8 CONFORMITY	3
8.1 Homogeneity	3
8.2 Sampling.....	3
8.3 Testing.....	4
8.4 Nonconformities	4
ANNEXURES 3153/A AND 3153/B – (NOT USED).....	5
ANNEXURE 3153/C – SCHEDULE OF IDENTIFIED RECORDS	5
C1 Schedule of Identified Records.....	5
ANNEXURES 3153/D TO 3153/K – (NOT USED)	5
ANNEXURE 3153/L – MINIMUM FREQUENCY OF TESTING	6
L1 Coarse Aggregates.....	6
L2 Fine Aggregates.....	6
L3 Processed RAP Material.....	6
ANNEXURE 3153/M – REFERENCED DOCUMENTS	7
LAST PAGE OF THIS DOCUMENT IS	7

FOREWORD

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This document should be read with all the documents forming the Contract.

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REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TfNSW 3153 Edition 1 Revision 0.

All revisions to the previous version (other than minor editorial and project specific changes) are indicated by a vertical line in the margin as shown here, except when it is a new edition and the text has been extensively rewritten.

PROJECT SPECIFIC CHANGES

Any project specific changes are indicated in the following manner:

- (a) Text which is additional to the base document and which is included in the Specification is shown in bold italics e.g. ***Additional Text***.
- (b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out e.g. ~~Deleted Text~~.

TfNSW QA SPECIFICATION 3153

RECLAIMED ASPHALT PAVEMENT MATERIAL

1 SCOPE

This Specification sets out the requirements for the supply of reclaimed asphalt pavement (RAP) material for use in asphalt.

2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

2.1 (NOT USED)

2.2 SCHEDULE OF IDENTIFIED RECORDS

The records listed in Annexure 3153/C are **Identified Records** for the purposes of Specification TfNSW Q Annexure Q/E.

2.3 FREQUENCY OF TESTING

The minimum frequency of testing is shown in Annexure 3153/L.

2.4 REFERENCED DOCUMENTS

Unless specified otherwise, the applicable issue of a referenced document, except TfNSW Specifications, must be the issue current at the date one week before the closing date for tenders.

Standards, Specifications and test methods are referred to in abbreviated form (e.g. AS 1234). For convenience, the full titles are given in Annexure 3153/M.

3 DEFINITIONS AND ABBREVIATIONS

The term “the Supplier” means the supplier of the product covered by the scope of this Specification.

A Lot is a stockpile or multiple stockpiles with the same source properties and the same production parameters.

The following abbreviations apply to this Specification:

EPA	NSW Environment Protection Authority
NATA	National Association of Testing Authorities
PAFV	Polished Aggregate Friction Value
RAP	Reclaimed asphalt pavement

SMA Stone mastic asphalt

4 SUPPLIER'S QUALITY MANAGEMENT SYSTEM

The Supplier must establish and maintain a Quality Management System complying with AS/NZS ISO 9001 as a means of ensuring that the product conforms to this Specification.

Provide evidence verifying compliance with this Clause.

Implement a RAP Management Plan which conforms to the requirements of this Specification.

5 MATERIALS

RAP material must comply with the following requirements:

- (a) It must be sourced totally from asphalt and must not contain any foreign materials such as road base, concrete, coal tar, plastics, brick, timber, scrap rubber etc as defined in Test Method TfNSW T276, and must be free from dust, clay, dirt or other deleterious matter.
- (b) It must comply with the conditions of the relevant NSW Environment Protection Authority (EPA) resource recovery exemption.
- (c) The aggregates as described in Clause 8.1 must conform to the requirements of Tables 3152.1 and 3152.2 of TfNSW 3152 except for the requirements for stone mastic asphalt (SMA). The particle size distribution and material finer than 75 µm must be determined on the total fraction after washing in toluene.

6 (NOT USED)

7 PROCESS CONTROL

Production of RAP material must be subject to process control in accordance with Clauses 7.1 to 7.5.

7.1 PROCESSING

Blend, crush and screen the reclaimed asphalt pavement material to ensure that:

- (a) 100% passes the 26.5mm AS sieve;
- (b) it is free flowing with consistent particle size distribution and complying with the tolerances specified in Table 3152.3 of TfNSW 3152;
- (c) it has minimal fracture of aggregate particles.

7.2 STOCKPILING

At the processing site, establish separate stockpiles for processed and unprocessed RAP material. Each processed stockpile must not exceed 1,000 tonnes.

7.3 TRANSPORT OF PROCESSED MATERIAL FROM PROCESSING SITE TO THE ASPHALT PLANT

Undertake the transport of processed RAP material from the processing site to the asphalt plant in a manner such that:

- (a) there is no segregation or contamination of the processed RAP material;
- (b) delays that adversely impact on productivity or cause a change in the mix during production do not occur.

7.4 STOCKPILES AT ASPHALT PLANT

At the asphalt plant:

- (a) each stockpile of RAP material must not exceed 500 tonnes;
- (b) stockpiles must be configured to prevent contamination;
- (c) each stockpile must remain free flowing without agglomeration of the material prior to use.

Where RAP material in a stockpile is found to contain lumps or is not free flowing, it must not be used in asphalt production. Such materials may be reprocessed to comply with this Specification.

7.5 TRACEABILITY OF MATERIAL IN ASPHALT PRODUCTION

The RAP material used in asphalt production must be traceable to a designated stockpile.

8 CONFORMITY

Verify conformity to this Specification by sampling and testing, and providing records of process control.

8.1 HOMOGENEITY

The RAP Management Plan must ensure the distribution of aggregate in each stockpile is visually homogeneous.

Exercise due care when using absorptive aggregates to ensure that their distribution in the stockpile does not produce variable binder absorption in the asphalt mix.

Address in the RAP Management Plan the control of moisture in stockpiles.

8.2 SAMPLING

Nominate the sampling locations, frequencies and method of sampling in the PROJECT QUALITY PLAN.

All samples for testing must be taken from stockpiles as described in the RAP Management Plan. Carry out sampling and testing within a two week period prior to the incorporation of RAP in the asphalt manufacturing process.

8.3 TESTING

8.3.1 Minimum Frequency of Testing

The PROJECT QUALITY PLAN must nominate the frequency of testing which must not be less than the minimum specified Annexure 3153/L. Where a minimum frequency of testing is not specified, nominate an appropriate frequency.

You may propose to the Principal that a reduced minimum frequency of testing be accepted in accordance with TfNSW Q. Support your proposal by a statistical analysis verifying consistent process capability and product characteristics.

In the event of a nonconformity, a reduced frequency of testing must revert immediately to the specified minimum frequency of testing.

8.3.2 Maximum Lot Size

The maximum Lot size must conform to the requirements of TfNSW Q and, notwithstanding TfNSW Q, must not exceed the quantities specified in Clause 7.

8.4 NONCONFORMITIES

If a Lot fails to conform to this Specification, such failure will constitute a nonconformity under the Contract. Do not use nonconforming Lot in the production of asphalt.

ANNEXURES 3153/A AND 3153/B – (NOT USED)

ANNEXURE 3153/C – SCHEDULE OF IDENTIFIED RECORDS

Refer to Clause 2.2.

C1 SCHEDULE OF IDENTIFIED RECORDS

The records listed below are Identified Records for the purposes of TfNSW Q Annexure Q/E.

Clause	Description of Identified Record
5	All records necessary to comply with EPA requirements
7.5	Traceability of RAP material used in asphalt mixes
8.3.1	Test reports of all specified properties and characteristics at the minimum frequency of testing
8.3.1	Proposals for acceptance of a reduced frequency of testing

ANNEXURES 3153/D TO 3153/K – (NOT USED)

ANNEXURE 3153/L – MINIMUM FREQUENCY OF TESTING

Refer to Clause 2.3.

L1 COARSE AGGREGATES

Test Method	Characteristic Analysed	Minimum Frequency of Testing
AS 1141.14	Particle Shape	1 per 3 months
TfNSW T215	Wet Strength	1 per 3 months
TfNSW T215	Wet/Dry Variation	1 per 3 months
AS 1141.41 & AS 1141.42	PAFV	1 every 12 months
AS 1141.6.1	Water Absorption	1 per 3 months
AS 1141.6.1	Apparent Density	1 per 3 months

L2 FINE AGGREGATES

Test Method	Characteristic Analysed	Minimum Frequency of Testing
AS 1141.5	Water Absorption	1 per 3 months
AS 1141.5	Dry Particle Density	1 per 3 months

L3 PROCESSED RAP MATERIAL

Test Method	Characteristic Analysed	Minimum Frequency of Testing
AS 2891.3.1	Bitumen Content and Aggregate Gradation	Daily
T660	Moisture Content	Daily

ANNEXURE 3153/M – REFERENCED DOCUMENTS

Refer to Clause 2.4.

TfNSW Specifications

TfNSW Q	Quality Management System
TfNSW 3152	Aggregates for Asphalt

TfNSW Test Methods

TfNSW T215	Wet/Dry Strength Variation
TfNSW T276	Foreign Materials Content of Recycled Crushed Concrete
TfNSW T660	Moisture Content of Bituminous Mixes (Mass Loss Method)

Australian Standards

AS 1141	Methods for sampling and testing aggregates
AS 1141.5	Particle density and water absorption of fine aggregate
AS 1141.6.1	Particle density and water absorption of coarse aggregate – Weighing-in-water method
AS 1141.14	Particle shape, by proportional caliper
AS 1141.41	Polished aggregate friction value – Horizontal bed machine
AS 1141.42	Pendulum friction test
AS/NZS 2891.3.1	Bitumen content and aggregate grading – Reflux method
AS/NZS ISO 9001	Quality management systems - Requirements